

SPEECH  
SYNTHESIS SYSTEM 100

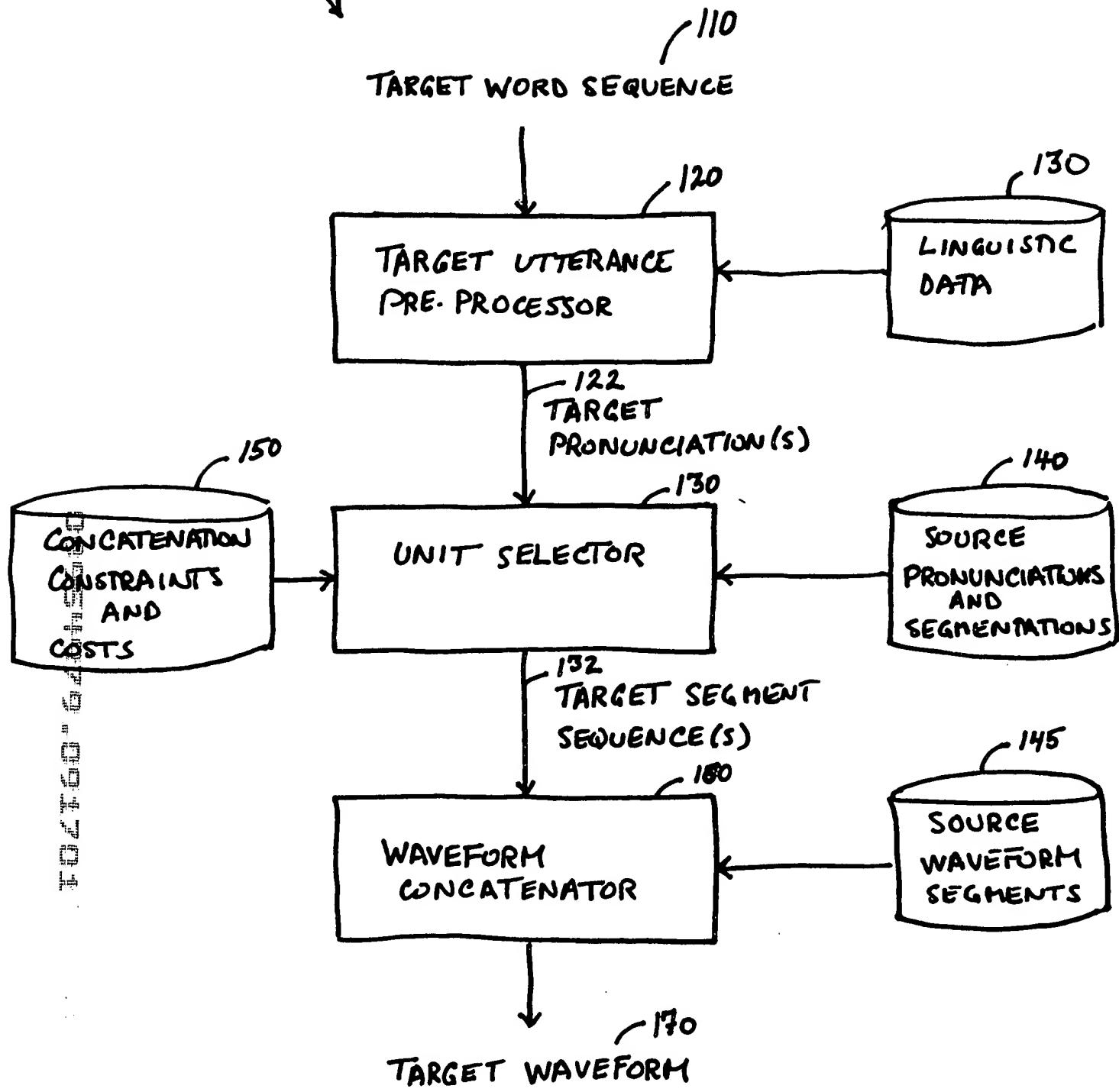


FIG. 1

## TARGET UTTERANCE PRE-PROCESSING:

TOP TO BOTTOM ORDERING

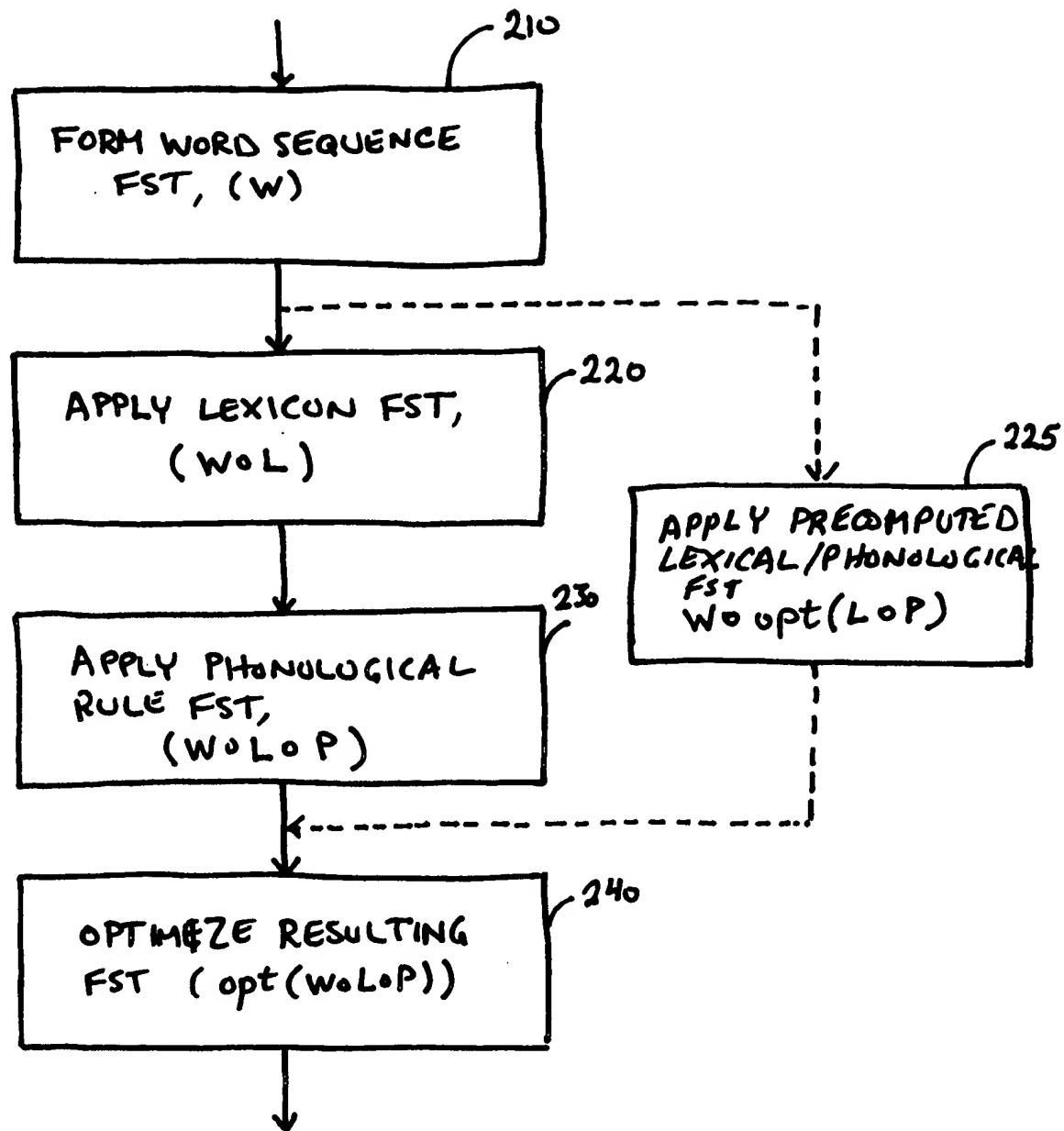


FIG. 2

## UNIT SELECTION:

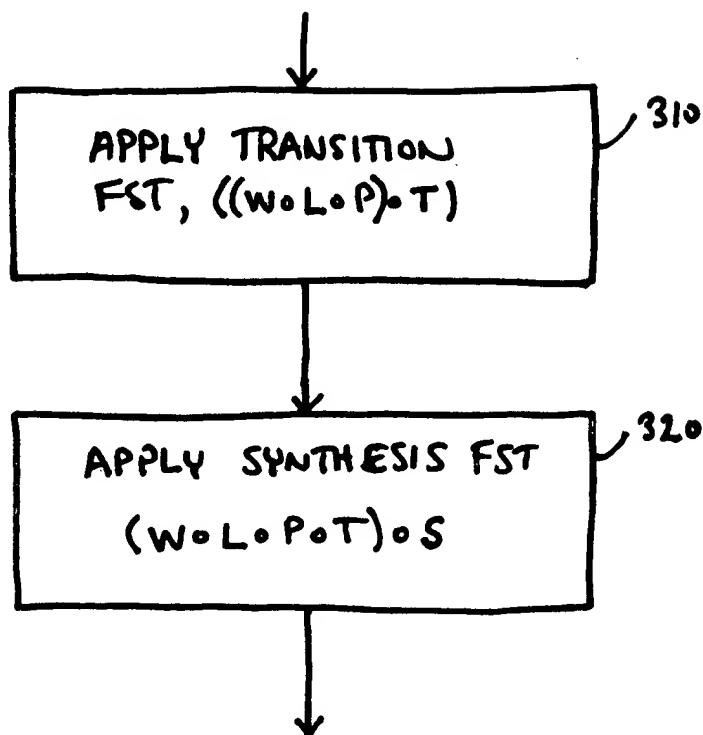


FIG. 3

## FORMING SYNTHESIS FST (S)

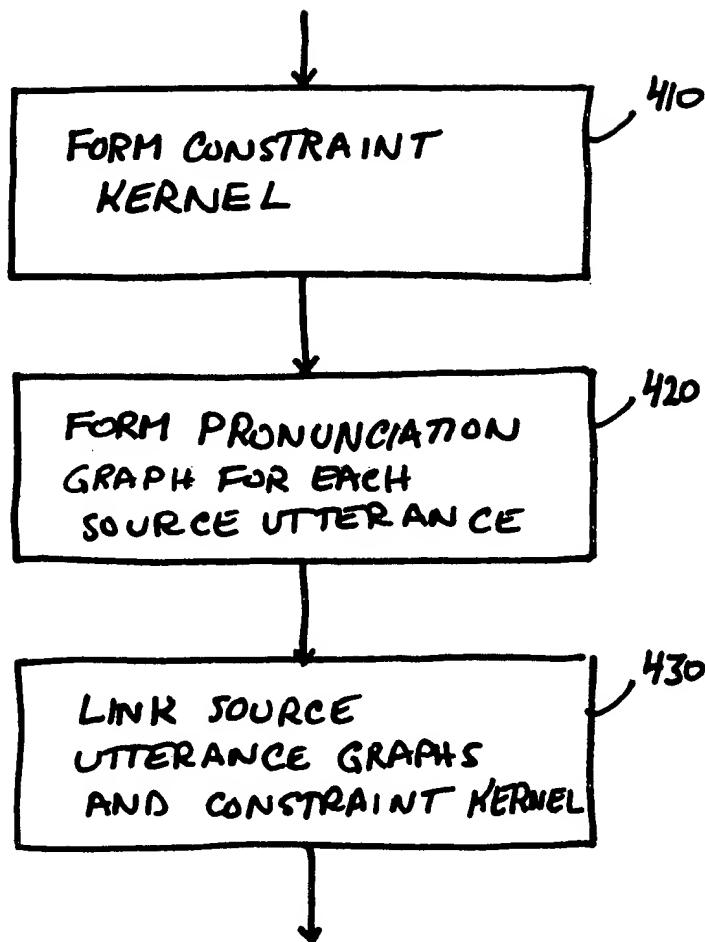
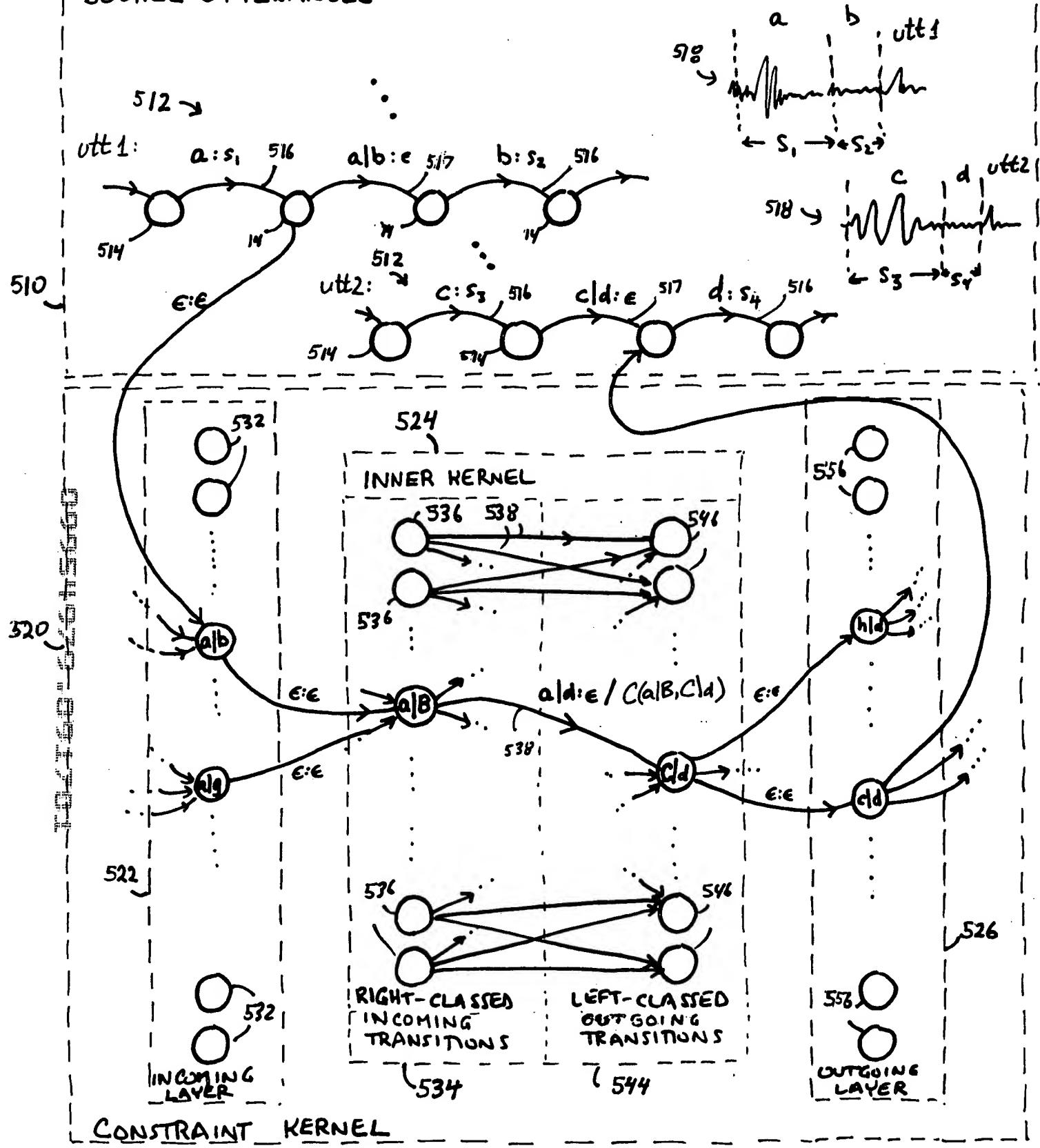


FIG. 4

SOURCE UTTERANCES



~ 500

FIG. 5

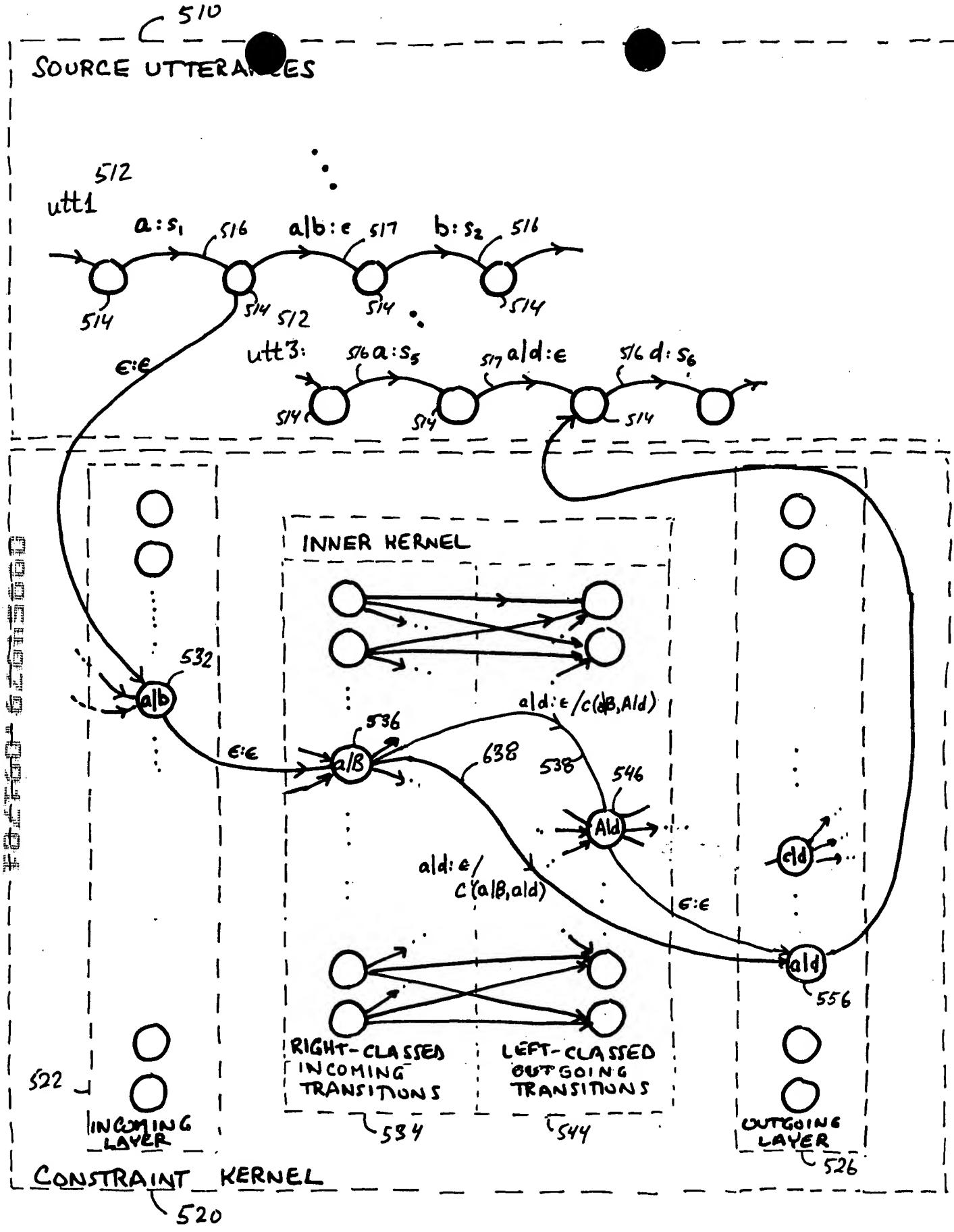


FIG. 6

# SOURCE UTTERANCES

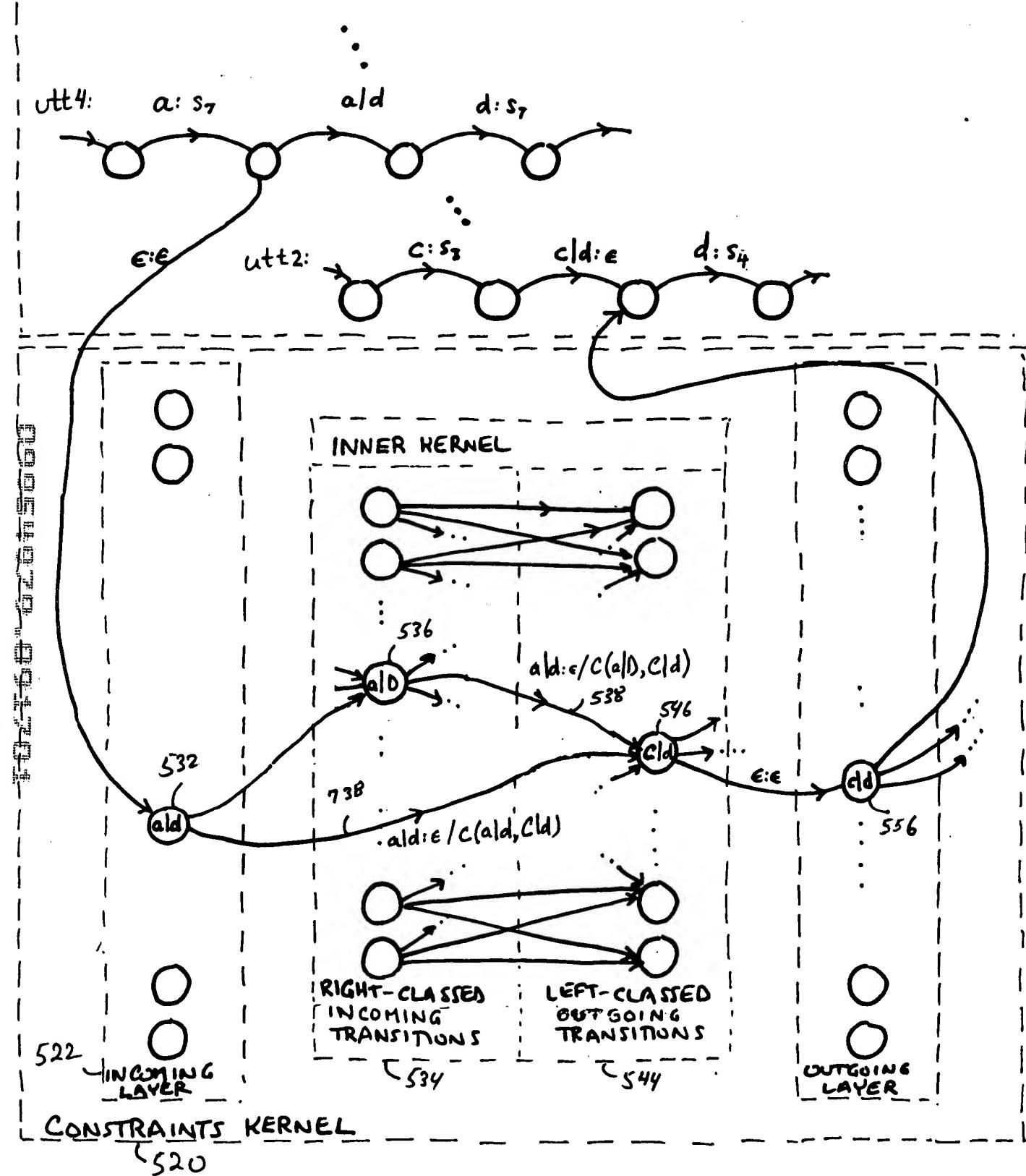


FIG. 7

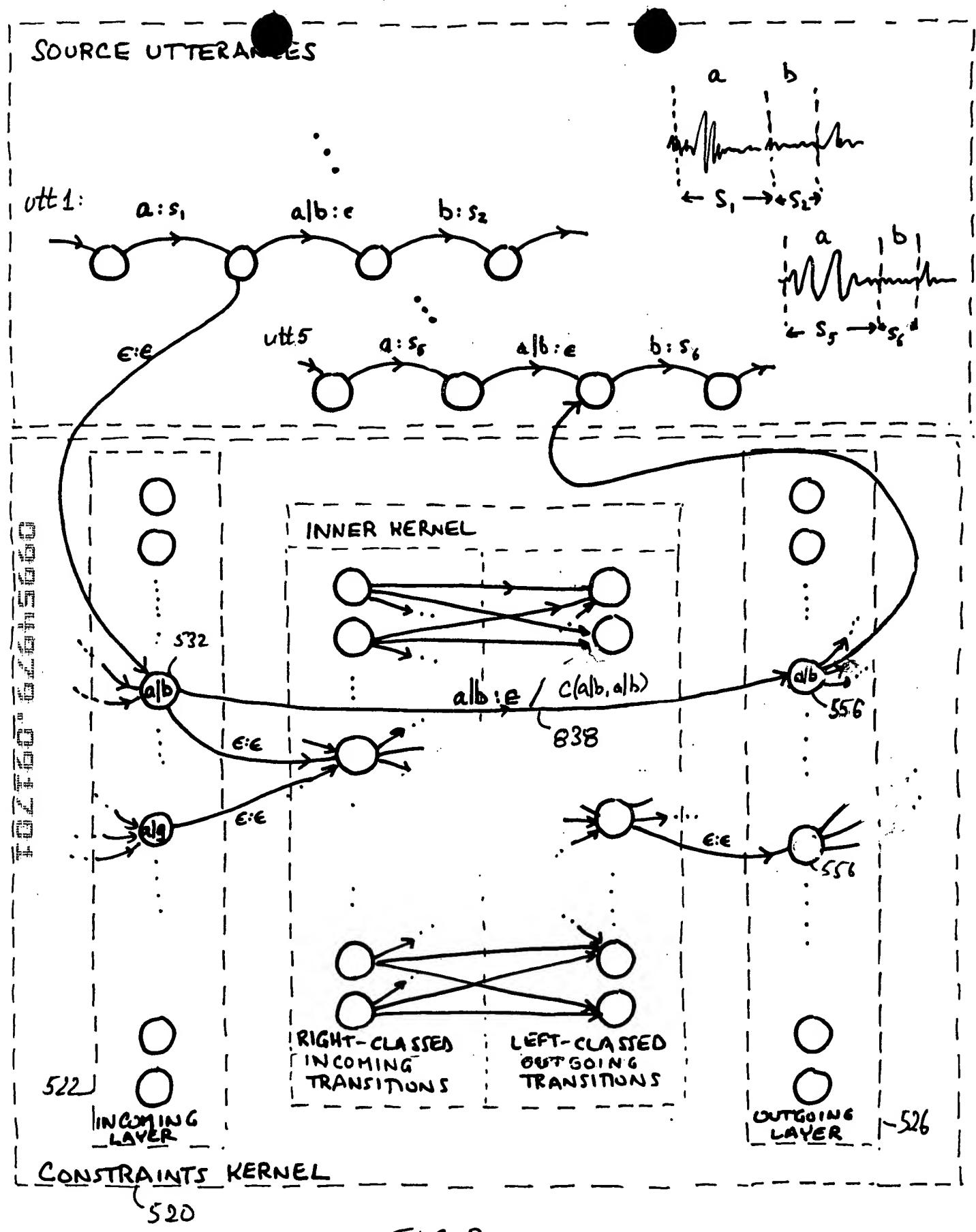


FIG. 8

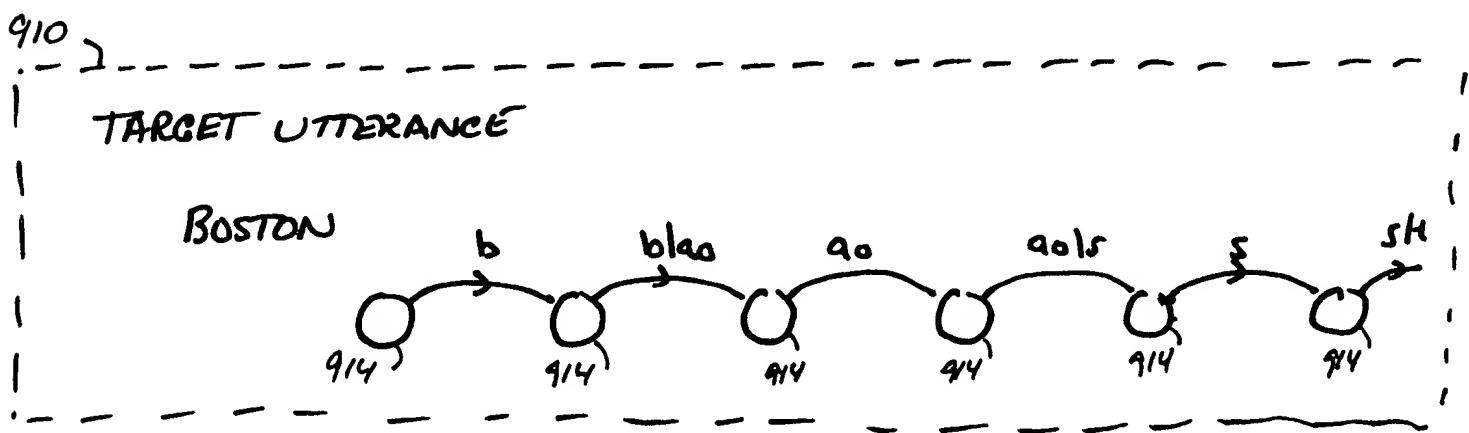
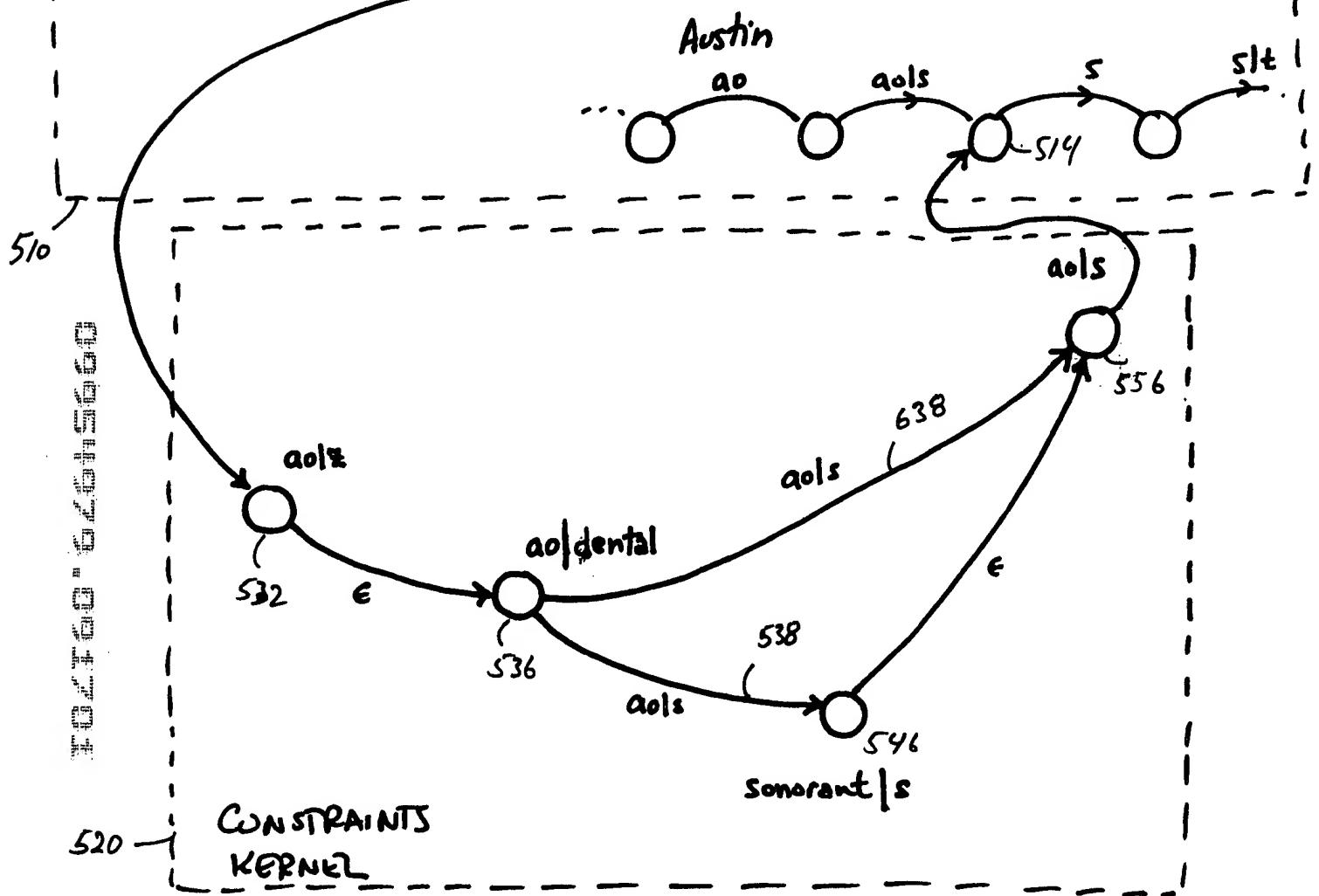
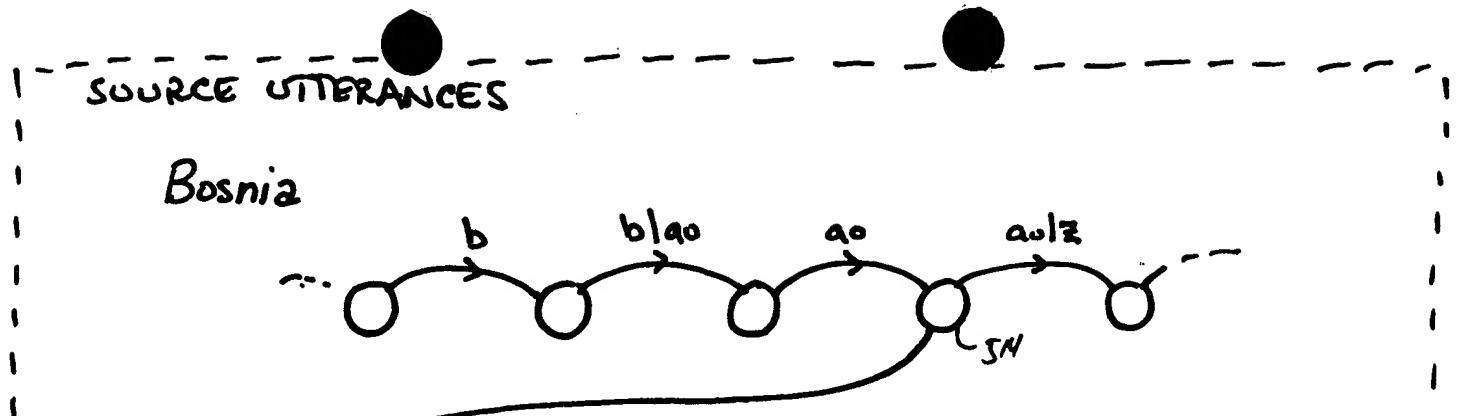


FIG. 9

vowel: y iy ih ix ux ey eh ae ay oy uw uh ah ax ow er aa ao aw  
 semivowel: w l r el  
 nasal: m em n en ng  
 aspirant: hh  
 obstruent: b bcl p pcl f v d dcl t tcl s z sh zh ch jh th dh dx g gcl k kcl  
 silence: h# pau

FIG. 10A

	vowel	semivowel	nasal	obstruent	aspirant	silence
vowel	10000	10000	7500	10	10	10
semivowel	1000	7500	7500	10	10	10
nasal	5000	10	10	10	10	10
obstruent	10	10	10	10000	10	10
aspirant	5000	5000	10	5000	10	10
silence	10	10	10	10	10	10

FIG. 10B

vowel: y iy ih ix ux ey eh ae ay oy uw uh ah ax ow er aa ao aw w l r el  
fricative: f v s z th dh dx sh zh ch jh hh  
stop: b bcl d dcl g p pcl t tcl k kcl  
nasal: m em n en ng  
silence: h# pau

## FIG. 11

PHONETIC SYMBOLS

labial: b bcl p pcl f v w  
dental: d dcl t tcl s z sh zh ch jh th dh dx  
velar: g gcl k kcl  
nasal\_labial: m em  
nasal\_dental: n en  
nasal\_velar: ng  
front: y iy ih ix ux ey eh ae ay oy  
back: uw uh ah ax ow er aa ao aw l r el  
none: hh h# pau

## FIG. 12A

	labial	alveolar	velar	m	n	ng	front	back	none
labial	10	1000	1000	1000	1000	1000	1000	1000	1000
alveolar	1000	10	1000	1000	1000	1000	1000	1000	1000
velar	1000	1000	10	1000	1000	1000	1000	1000	1000
m	100	1000	1000	10	1000	1000	1000	1000	1000
n	1000	100	1000	1000	10	1000	1000	1000	1000
ng	1000	1000	100	1000	1000	10	1000	1000	1000
front	1000	1000	1000	1000	1000	1000	10	1000	1000
back	1000	1000	1000	1000	1000	1000	1000	10	1000
none	1000	1000	1000	1000	1000	1000	1000	1000	10

FIG. 12B

	labial	alveolar	velar	m	n	ng	front	back	none
labial	10	1000	1000	1000	1000	1000	1000	1000	1000
alveolar	1000	10	1000	1000	1000	1000	1000	1000	1000
velar	1000	1000	10	1000	1000	1000	1000	1000	1000
m	100	1000	1000	10	1000	1000	1000	1000	1000
n	1000	100	1000	1000	10	1000	1000	1000	1000
ng	1000	1000	100	1000	1000	10	1000	1000	1000
front	1000	1000	1000	1000	1000	1000	10	1000	1000
back	1000	1000	1000	1000	1000	1000	1000	10	1000
none	1000	1000	1000	1000	1000	1000	1000	1000	10

FIG. 12C

retroflex: r er  
round: uw ux w ow aw  
sonorant: y iy ih ix ey eh ae ay oy uh ah ax aa ao l el m em n en ng  
other: b bcl p pcl f v d dcl t tcl s z sh zh ch jh th dh dx g gcl k kcl hh h# pau

## FIG. 13A

retroflex: r er  
round: uw ux w b bcl p pcl f v m em  
sonorant: y iy ih ix ey eh ae ay oy aw uh ah ax ow aa ao l el n en ng  
other: d dcl t tcl s z sh zh ch jh th dh dx g gcl k kcl hh h# pau

## FIG. 13B

retroflex	10	100	100	100
round	100	10	100	100
sonorant	100	100	10	100
other	100	100	100	10

## FIG. 13C

retroflex	10	100	100	100
round	100	10	100	100
sonorant	100	100	10	100
other	100	100	100	10

## FIG. 13D

front: y iy ih ix ey eh ae ay oy  
 back: uh ah ax aa ao l el  
 retroflex: r er  
 round: uw ux w ow aw  
 other: b bcl p pcl f v d dcl t tcl s z sh zh ch jh th dh dx g gcl k kcl m em n en ng hh h# pau

FIG. 14A

front: y iy ih ix ey eh ae aw  
 back: uh ah ow aa ao ay oy l el  
 retroflex: r er  
 round: uw ux w  
 schwa: ax  
 other: b bcl p pcl f v d dcl t tcl s z sh zh ch jh th dh dx g gcl k kcl m em n en ng hh h# pau

FIG. 14B

	front	back	retroflex	round	other
front	10	10	10	10	10
back	10	10	10	10	10
retroflex	10	10	10	10	10
round	10	10	10	10	10
other	500	500	500	500	10

FIG. 14C

	front	back	retroflex	round	schwa	other
front	10	100	100	100	500	100
back	100	10	100	100	500	100
retroflex	100	100	10	100	500	100
round	100	100	100	10	500	100
schwa	500	500	500	500	10	500
other	100	100	100	100	500	10

FIG. 14D

obstruent: b bcl p pcl f v d dcl t tcl s z sh zh ch jh th dh dx g gcl k kcl hh h# pau  
 sonorant: y iy ih ix ux ey eh ae aw uw uh ah ax ow er aa ao ay oy w l r el m em n en ng

FIG. 15A

voiced: b bcl v d dcl z zh jh dh g gcl dx h# pau  
 unvoiced: p pcl f t tcl s sh ch th k kcl hh  
 sonorant: y iy ih ix ux ey eh ae aw uw uh ah ax ow er aa ao ay oy w l r el m em n en ng

FIG. 15B

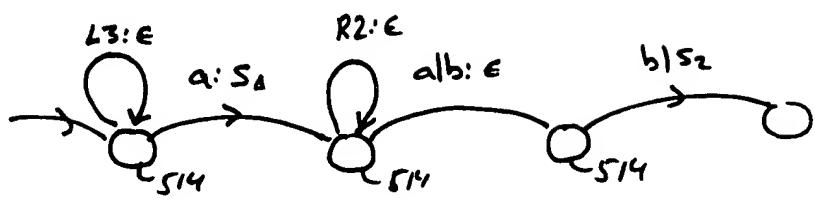
	obstruent	sonorant
obstruent	10	1000
sonorant	1000	10

FIG. 15C

	voiced	unvoiced	sonorant
voiced	10	100	1000
unvoiced	100	10	1000
sonorant	1000	1000	10

FIG. 15D

Source utterance  $s_1^2$



target utterance  $q_1^2$

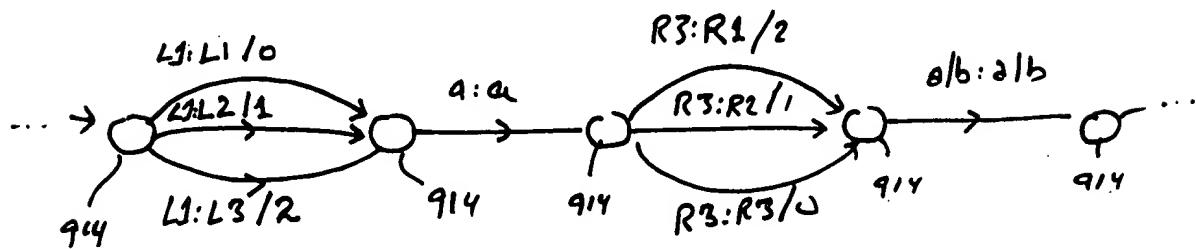


FIG. 16